



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

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JUN 01 2006

Mr. Mark A. Prescott
Department of Homeland Security
U.S. Coast Guard, Commandant (G-MSO-5)
Deepwater Ports Standards Division
2100 Second Street, SW
Washington, DC 20593-0001

Docket No: USCG-2005-21232

Dear Mr. Prescott:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 has completed its review of the Draft Environmental Impact Statement (DEIS) for the liquefied natural gas (LNG) deepwater port and associated activities, including natural gas pipeline facilities proposed by Beacon Port Limited Liability Company (LLC). EPA is responsible for reviewing and commenting on Federal actions significantly affecting the quality of the environment. In addition, EPA is a cooperating agency for this project. EPA's review of the DEIS includes comments pursuant to both of EPA's roles in this matter, though the Attachment primarily pertains to the latter role. EPA requests careful attention to the comments in the Attachment because EPA's record of decision for its subsequent actions under the Clean Air Act and Clean Water Act will fully consider the Final Environmental Impact Statement (FEIS), including its analyses, prepared by the Coast Guard for this deepwater port application.

Beacon Port LLC, a wholly owned subsidiary of ConocoPhillips, proposes to construct a deepwater port and associated anchorages in the Gulf of Mexico, approximately 50 miles east-southeast of Galveston, Texas, in water depth of approximately 65 feet. A natural gas pipeline junction platform, also part of the proposed Port, would be located approximately 29 miles southeast of Johnson's Bayou, Louisiana, in the Outer Continental Shelf (OCS) lease block West Cameron (WC) 167. The proposed port would be capable of unloading LNG carriers of up to 253,000 cubic meters of LNG cargo capacity. Storage facilities for LNG would include two tanks having a combined total capacity of 10.6 million cubic feet or 300,000 cubic meters of LNG. The applicant proposes to use Open Rack Vaporization (ORV), also known as an "open loop" system, to regasify the LNG.

The DEIS examines multiple alternatives for geographic sites for the port, onshore and offshore pipeline routes, fabrication locations, vaporization technologies, seawater intake/discharge designs, and marine life exclusion systems. After evaluation of possibilities, the applicant elected to use: the High Island (HIA) 27 lease block for the designated anchorage area for the Main Platform and WC 167 for the Riser Platform with the connection pipeline; fabrication of Gravity Based Structures (GBS) at the Kiewit site in San Patricio County, Texas; the use of the ORVs for the regasification technology; the use of 6.25 mm wedge-wire screens at

the intake structures and diffusers comprised of six 30-inch diameter discharge ports located approximately 3.85 meters from the seafloor. The operation of a LNG import terminal was compared to the no-action option.

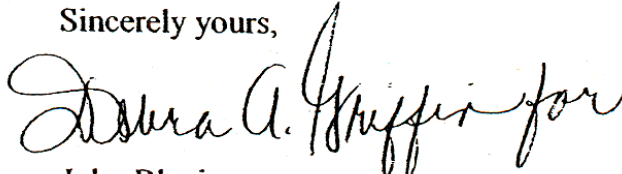
Without further consideration of additional pollution minimization measures to address potential direct and cumulative adverse environmental impacts to Gulf waters and habitat, particularly those associated with use of chemical biocides and the thermal effect of the discharge on organisms in the receiving waters, EPA has concerns about the use of open rack vaporization (ORV) as the proposed re-gasification technology. We are also concerned about the entrainment of eggs and larvae associated with the use of ORV technology, particularly the extent to which such entrainment has the potential to increase otherwise "natural" mortality rates of currently stressed fish stocks in the Gulf (i.e., by further reducing the number of early life stage organisms that reach breeding age). The effect of the potential reduction caused by this proposal should be more fully evaluated in the FEIS, if at all possible.

EPA would like to coordinate with the U.S. Coast Guard, the Maritime Administration (MARAD), and the proposing company to consider additional design and operational modifications that could be reasonably implemented to further reduce potential environmental impacts associated with this project. Where such additional modifications could be identified, such as treatment of the discharge to reduce toxicants, they should be included as conditions to the Deepwater Port Act license and evaluated in the FEIS.

EPA believes that these impacts can be mitigated by project modifications. EPA is requesting that additional information be gathered to evaluate and resolve the outstanding issues noted in the enclosed detailed comments, including potential alternatives to and modifications to the use of ORV technology. EPA therefore classifies the DEIS as EO-2; i.e. (Environmental Objections-Insufficient Information). We look forward to coordinating with the Coast Guard, MARAD and ConocoPhillips to address the issues identified in this letter.

EPA appreciates the opportunity to review and provide comments on the DEIS, and our technical staff would be happy to discuss these comments with you in greater detail. If you have any questions, please contact Mike Jansky of my staff at (214) 665-7451 or e-mail him at jansky.michael@epa.gov for assistance. When the FEIS is published, please send our office five copies.

Sincerely yours,

A handwritten signature in dark ink, appearing to read "John A. Blevins for". The signature is fluid and cursive, with a large initial "J" and "B".

John Blevins
Director
Compliance Assurance and
Enforcement Division

Enclosure

**DETAILED COMMENTS
FOR THE
BEACON PORT LIQUEFIED NATURAL GAS
DEEPWATER PORT
UNITED STATES COAST GUARD
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

Background

Beacon Port LLC proposes the construction and operation of a liquefied natural gas (LNG) terminal using a Gravity-Based Structure (GBS) design. The GBS is essentially a large concrete storage structure that can hold LNG chilled to minus 274 degrees Fahrenheit. Beacon Port would employ two GBS storage tanks. The facility will be located in the Gulf of Mexico (Gulf), approximately 50 miles east-southeast of Galveston, Texas, in lease block High Island (HIA) 27, in 65-feet of water. The proposed port would be designed to unload liquefied natural gas (LNG) carriers with cargo capacity of up to 253,000 cubic-meters and regasify a daily average of 1.5 billion cubic feet of gas per day (bcf/d), with a peak daily rate of 1.8 bcf/d. The applicant proposes to use Open Rack Vaporization (ORV), also known as an "open loop" system, to regasify the LNG. The ORV system would use the natural "heat" of Gulf of Mexico water in a single pass through to change the state of the LNG from liquid to gas.

Water Concerns

To achieve the proposed send-out rate of 1.5 bcf/d, the ORVs would require 167 million gallons per day (MGD) of Gulf water. Over the planned 30-year life of the project, the facility would pump 1.8 trillion gallons of Gulf water through the ORV system. The ORV systems would require use of biocides to control marine growth and prevent bio-fouling of the intake equipment, heat exchangers and pumps. The applicant proposes using a chemical biocide, sodium hypochlorite, which can be more toxic than other chemical biocides. The sodium hypochlorite would be injected at a continuous rate of 0.2 mg/l. In addition, to prevent a potential buildup of marine growth, each of the up-to-7 pumps in operation would be shocked or "spiked" with an additional 2.0 mg/l sodium hypochlorite for 20-minutes during every 8-hours of operation. This spiking operation would occur such that only one pump would be spiked at a time. The facility does not propose to treat the discharged water and with normal operation plus the spiking operation would add approximately 1,960 pounds of untreated sodium hypochlorite each day, or over 715,000 pounds per year to the warming water stream. The FEIS should further examine the fate and effects in the marine environment of the sodium hypochlorite contained in the effluent plume. Additionally, the FEIS should include evaluation of alternative biocides, or at least alternative chemical biocides, as well as the feasibility of de-chlorination to control the toxicity associated with sodium hypochlorite. In EPA's permitting experience, cost-effective de-chlorination can reduce total residual chlorine down to the level of detection.

In addition to these issues, the FEIS should address the potential impacts to marine life from the discharge plume. Where fish and eggs are present in the water column around the discharge point, it can be reasonably anticipated that eggs and larvae will be drawn into the discharge plume. EPA believes that the EIS could better analyze the effects of the cold temperature of the discharge, which would be 15.3 degrees Fahrenheit cooler than the intake, at the point of discharge. Though the effluent plume may not cause the same effects on all of the larvae and eggs as entrainment through the system, the potential for adverse impacts remains and

should, if possible, be estimated. The document should include a summary of average water temperatures across the range of depths of the intake and discharge points. The EIS should discuss the flow dynamics of the cold water plume, including the potential to capture non-motile marine organisms in the discharge plume and the direct and indirect impacts of the cold water exposure on these organisms entrained in the cold water discharge plume.

Lastly, the use of unmodified ORV systems may cause adverse aquatic impacts due to impingement and entrainment (I&E). The DEIS properly assumes 100% mortality of non-mobile aquatic organisms that are larger than the screen wire opening, 0.25 inch, due to impingement. Additionally, those organisms that are smaller than the screen wire opening, most notably fish eggs and larvae, would be entrained into and through the re-gasification equipment, and as such, are likely to be injured or killed by the intake impellers, as well as the sodium hypochlorite and/or the temperature drop associated with the warming of the LNG. The EIS should more completely explore alternative technologies for excluding smaller marine life that would reduce these impacts, including variations in the intake screen size and maintenance that could reduce I&E effects.

More recent technical information regarding intake screen sizes and maintenance should be evaluated among the alternatives in the FEIS. The DEIS at page 2-25 cites to a 2001 EPA document for the example where the Eddystone Station on the Delaware River in Pennsylvania virtually eliminated impingement mortality by using wedge-wire screens, which the DEIS notes is located in brackish water. The next paragraph states that a constraint of wedge-wire barriers is that they are easily plugged with floating marine material. The relevance of the correlation between the Eddystone Station experience (brackish water, riverine system, depth of intake structures, fish species habitat, etc.) and the proposed Beacon Port facility (marine water, deep water environment, etc.) remains unclear because the DEIS does not compare the nature of "floating marine material" nor other differing environmental characteristics of the two locations. The FEIS should do so. The EIS also should describe and evaluate the feasibility of automated air bursts to sparge, i.e., clear, intake structures that are larger and equipped with finer meshed screens to reduce such "floating marine material" to maintain a relatively constant intake velocity. More recent EPA technical information is available at: www.epa.gov/waterscience/316b/devdoc/final.htm and www.epa.gov/waterscience/316b/ph3.htm.

Submerged Combustion Vaporization (SCV) system, also known as a "closed loop" system is explored by the DEIS as an alternative LNG regasification system. This type of system is not influenced by Gulf water temperature, and would not exhibit the impacts to marine life inherent in use of the ORV technology. In general the FEIS document should address this option in more detail throughout the document, including the range of air pollutant emissions associated with SCV and air pollution control technologies, if only to assure the ability to take prompt action based on this alternative without needing to develop supplemental analyses. For example, the EIS identifies this alternative technology, but it only cites cost (i.e., the need to use part of the LNG stream) as the sole reason to select the ORV system as the preferred system over the SCV and other variants on the closed loop technology. It is difficult to determine whether the vaporization technology evaluation criteria on page 2-15, including cost of construction and operation, were applied. For an example of a useful approach, see Table 2.1.2 Comparison of ORV, SCV and IFV Boiling/Condensing Systems, in the Main Pass Energy Hub Final EIS (pp. 2-12 to 2-13). Table 2.1.1 should be modified to show the type of gasification system used or proposed to be use.

Affected Environment

The discussion on page 3-8 states that “Since the Proposed Beacon Port DWP Site and Alternative DWP Site are located offshore of an attainment area in Texas, and EPA does not otherwise find any basis to consider nonattainment review rules applicable, the Proposed Beacon Port DWP Site and Alternative DWP Site will be considered to be located in an attainment area.” This statement is incorrect in that the proposed sites are offshore from an ozone nonattainment area in Texas. Also, we do not view the classification of the nearest onshore area alone as determinative. EPA has initially determined that the Beacon Port facility should be treated as if located in an attainment/unclassifiable area after consideration of multiple factors, including the requirements of the Clean Air Act, Deepwater Port Act, and Texas law, the location of the proposed port, and the regulatory treatment of other air pollution sources in the same general area. In other factual circumstances a different outcome could have been appropriate. A more detailed explanation of the rationale for this initial determination will be provided in the statement of basis for the proposed air permit for the facility.

Further corrections should be made to statements about attainment classification as they appear at p. 3-100 and 3-101 of the DEIS (“The OCS has not been classifiable and assumed attainment; therefore, nonattainment NSR is not applicable to the Proposed Beacon Port DWP and Offshore Facilities.” Also: “The Proposed Beacon Port DWP would be located in the OCS, outside of the Texas seaward boundary, which has not been classified for criteria pollutants and assumed in attainment for all criteria pollutants.”). The non-classified status of the OCS does not mean that it is assumed in attainment, and in any case the status of the OCS by itself is not determinative of the treatment of a deepwater port. In appropriate factual circumstances a deepwater port can be subject to nonattainment new source review, notwithstanding that it is located on the OCS in an area that has not been classified.

To clarify the “Texas Air Regulations” discussion on p. 3-101, it should be noted that there may be some state air quality laws and regulations that are not inconsistent with Federal law but that are nonetheless not applicable to the facility. (This appears to be recognized elsewhere by Table 3.2-33’s inclusion of a column for “applicable.”)

Air Quality Concerns

One of the proposed locations for construction of the GBSs is in Brazoria County, a nonattainment county for the 8-hour ozone standard. If the Brazoria County site is selected, a general conformity determination will become necessary and the document provides a clear commitment for this. We will expect that the determination will be reflected in the Final EIS.

There were some inconsistencies and errors in the text of the document as follows.

1. P.3-182, Existing Ambient Air Quality; The nonattainment classification is listed as “severe” and the text states that the area must attain the 1-hour ozone standard by November 15, 2007. EPA revoked the 1-hour ozone standard on June 15, 2005, and the Houston-Galveston-Brazoria area is no longer obligated to attain this standard. Under the 8-hour standard, which is the applicable standard in Brazoria County, the correct classification is “moderate.”

2. P.3-183, General Conformity; Please correct the nonattainment classification to “moderate,” which has a de minimis threshold of 100 tons per year, not the 25 tpy listed in the document.
3. P.3-184; Please correct the area’s nonattainment classification to “moderate.”
4. P.4-173 and P.6-43, Air Quality; Please remove the reference to the need to obtain the 1-hour ozone standard no later than November 15, 2007.
5. P.4-174; Please correct the text following Table 4.3-11 to reflect the applicable de minimis threshold of 100 tpy, not 25 tpy as indicated in the document. The increased de minimis ceiling also means that only two of the four fabrication years are expected to exceed the de minimis level.

Air Quality - Mitigation

The mitigation discussion should be more detailed. The following information is requested and suggested to be incorporated in the FEIS.

Based on the evaluation criteria (see Section 4.1.12), impacts on air quality as a result of operation of the stationary equipment at the Proposed Terminal, Riser Platform and offshore pipeline would be considered long-term, adverse, and minor. However, if alternative vaporization technologies are used in place of the proposed ORV technology, emissions of NOx may be minimized by the use of NOx controls such as low-NOx burners on the combustion device and Selective Catalytic Reduction (SCR) on the combustion device’s exhaust stream.

Emissions of criteria pollutants (except CO) from mobile sources associated with the Proposed Beacon Port DWP are greater than the stationary sources. Air pollution from mobile sources that will be dedicated to and under the control of the Proposed Beacon Port DWP may be minimized by the use of new vessels that would be more efficient and therefore generate less air pollution. For example, Beacon Port LLC could consider the age and/or efficiency of transportation vehicles when directly purchasing the equipment or when awarding a contract for mobile equipment services. (Also, the construction site air mitigation discussion states: “Where practical, engine-powered equipment will be replaced with electrically powered equipment.”)

On pages 4-93 and 4-154, we note first that it may be appropriate for the mitigation discussion to include mitigation of minor impacts. See “Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations,” no. 19a (CEQ 1981). It is insufficient to state that air quality impacts are expected to be minor and not to discuss mitigation measures. Second, in addition to identifying the potential mitigation measures, to ensure that environmental effects of the proposed action are fairly assessed, the probability of these measures being implemented must also be discussed. *Id.* at no. 19b. Third, other potential mitigation measures exist and should be discussed. For construction emissions, EPA suggests that the FEIS consider:

- Requiring low sulfur diesel fuel, (15 parts per million), if available.

- Use of newer, cleaner equipment, and/or alternative engine types as such as electric, hydrogen fuel cells, and other clean fuels.

For operational emissions, examples of additional potential mitigation measures include:

- Purchase of emission reduction credits or discrete emission reduction credits to mitigate potential onshore impacts from operational emissions.
- Use of low-sulfur fuel by service vessels, and use of natural gas for LNG vessels.